

A NEW SPECIES OF NEUROPOGON FROM
THE UNITED STATESHENRY A. IMSHAUG¹

Neuropogon is a rather small genus of lichens, or, more properly, lichen-forming fungi, which is closely related to the genus *Usnea*. Motyka (1936) in his monograph of the latter genus included *Neuropogon* as a subgenus. In addition to the monograph by Motyka, *Neuropogon* has been studied monographically by Lamb (1939 and 1948). Motyka (1936) recognized twelve species while Lamb (1948) recognized eleven (or possibly twelve) species. As a result of these studies the genus is better known taxonomically than most genera of lichen-forming fungi.

Considerable interest has centered on this genus because of its distribution. Only one species, *Neuropogon sulphureus*, is known from the northern hemisphere; all the other species are known only from the southern hemisphere. Lynge (1941) made an exhaustive study of *Neuropogon sulphureus* and brought together all the information known about this species. Included in this paper were a number of maps showing its distribution. It is a typical bipolar lichen, being found in the arctic, the antarctic and in the high Andes of South America. Its distribution in the northern hemisphere is limited to the arctic islands, and despite long and intensive search by many lichenologists this species has never been found on any of the continents of the northern hemisphere. In the arctic, *Neuropogon sulphureus* is quite monotypic, both morphologically and chemically, as stated by Lamb (1939) and Lynge (1941).

The discovery of a species of this genus on a continent in the northern hemisphere is, therefore, a find of no small importance. The present writer has searched for the genus for a number of years in alpine regions of western America without success. While studying at the Farlow Herbarium,² however, he had the good fortune to meet Dr. P. F. Scholander, who, in the course of conversation, mentioned the fact that he had collected a *Neuro-*

¹ University of Idaho, Moscow, Idaho.

² I am indebted to the late director of the Farlow Herbarium, Dr. W. L. White, for the many courtesies received while there. I am also indebted to the University of Michigan for the granting of a Horace H. Rackham Postdoctoral Fellowship for the year 1951-1952 which enabled me to spend considerable time at the Farlow Herbarium.

pogon in Mt. Rainier National Park some years previously. The subsequent examination of this material, deposited in the Farlow Herbarium, showed that this was an undescribed species of *Neuropogon*. Dr. I. M. Lamb, to whom a part of the collection was sent, agreed that it was a new species, and said, in a letter, "it comes closest to *N. acromelanus* Stirt., but differs in the laxer medulla and thin central strand, and cannot be included in that species." The new species is similar to *Neuropogon sulphureus* in the lax nature of the medulla, but differs in that the branches are not scabrid-verruculose.

It gives me great pleasure to name this interesting species in honor of one of lichenology's most devoted students and an outstanding monographer, Dr. I. Mackenzie Lamb.

Neuropogon lambii Imshaug, sp. nov.

Thallus parvus (usque ad 2 cm. altus), erectus, basi anguste substrato affixus, sat parce ramosus. Rami basales 0.70–0.85 mm. crassi (infra angustiores), sulphurei, omnino laeves et nudi, subnitidi, haud verruculosi. Ramuli terminales tereti, nigro-variegati, laeves, nitidi, apicibus subcapillaribus fere omnino nigris. Apicem versus rami et praecipue ramuli globoso-sorediati, soralia vulgo 0.2–0.5 mm. lata, ab initio sulphurea, deinde aterrima. Apothecia et pycnidia non visa. Medulla valde laxa, alba; axis tenuis, circ. $1/4$ – $1/3$ diametri ramorum. Reactiones: medulla KOH et Pd non mutatur. Specimen typicum in Herb. Farlow conservatum; legit prope Yakima Park, Mt. Rainier National Park, Washington, U. S. A., *P. F. Scholander*, Aug. 19, 1942.

Thallus erect fruticulose, up to 2 cm. tall, narrowly attached at the base to the substratum, branching sparsely. Basal branches 0.70–0.85 mm. in diam. at widest part but tapering to 0.3–0.4 mm. in diam. at point of attachment. Main branches sulphureous, but occasionally blackening above, subnitidous, smooth, neither foveolate, nor verrucose, nor annular rimose. Ultimate branches 0.1–0.25 mm. in diam. and tapering to a point; blackening so as to frequently produce a banded effect. Soredia yellowish, occasionally blackening, mealy granulose, in soralia 0.2–0.5 mm. across. Soralia rather abundant on ultimate branches.

Medulla white, lax, arachnoid; central axis well defined, white, usually rather thin, diameter of axis usually being $1/4$ – $1/3$ that of the branch (but occasionally approaching $1/2$ the diameter of the branch).

Apothecia and pycnidia unknown.

Chemical Reactions: Thallus (central axis, medulla and cortex) Pd — and KOH —.

Type Specimen: Yakima Park, 6000 ft., in Mt. Rainier National Park, Washington, U. S. A. Collected by *P. F. Scholander*, August 19, 1942 and deposited in the Farlow Herbarium, Harvard University. Specimen overgrown with *Alectoria pubescens*.

The occurrence of a lichen with arctic affinities on Mt. Rainier but not at high elevations in the Rocky Mountains is a matter of considerable interest, especially so since this is not the only example. *Buellia moriopsis* (Mass.) Th. Fr.³ was collected by the present writer in Mt. Rainier National Park in 1948. This species, although apparently common in the eastern Canadian Arctic and in the mountains of New England is unknown from the Rocky Mountains.

Torrey (1937) reported the discovery of *Dactylina arctica* on Mt. Rainier by Miss A. Wilson. The specimen was sent to Lynge for verification and since it is not in the herbarium of the New York Botanical Gardens it is presumed to be in Oslo. The taxonomy and distribution of the species now included in the genus *Dactylina* were thoroughly reviewed by Lynge (1933 and 1934). *Dactylina arctica* does not occur in the Rocky Mountains of the United States, although it does occur further north in Alberta. In the last few years the present writer made an intensive search for *D. arctica* in the Rocky Mountains but was unable to discover any localities south of Latitude 51° 24'. This would appear to be the approximate southern limit of its range in the Rocky Mountains.

Another species conspicuously absent from the Rocky Mountains is *Alectoria ochroleuca*. This species is, however, common in alpine regions of Mexico and the Andes.

Similar types of distribution are shown for the Umbilicariaceae by Llano (1950). This apparent absence of certain arctic and bipolar species from the Rocky Mountains is an interesting phytogeographical problem and one on which the present writer has devoted much field work. A detailed discussion of this problem will appear at a later date, after additional field work is completed.

LITERATURE CITED

- LAMB, I. M. 1939. A review of the genus *Neuropogon* (Nees & Flot.) Nyl., with special reference to the Antarctic species. Journ. Linn. Soc. Lond., Bot., **52**: 199-237.
- . 1948. Further data on the genus *Neuropogon*. Lilloa **14**: 139-168.
- LLANO, G. A. 1950. A monograph of the lichen family Umbilicariaceae in the Western Hemisphere. 281 pp. (Navexos P-831) Office of Naval Research, Washington, D. C.

³ This species is commonly called *B. atrata* (Sm. in Sm. & Sowerb.) Anzi. The basonym of the latter, however, is a later homonym of *Lichen atratus* Hedwig, which is now called *Lecanidion atrata*, a nonlichen-forming discomycetous fungus.

- LYNGE, B. 1933. On *Dufourea* and *Dactylina*. Three arctic lichens. Skrifter om Svalbard og Ishavet No. 59, 62 pp.
- . 1941. On *Neuropogon sulphureus* (König) Elenk., a bipolar lichen. Skr. Norsk. Vidensk.-Akad. Oslo, math.-naturw. Kl. 1940 (10): 1-35.
- MOTYKA, J. 1936. Lichenum generis *Usnea* studium monographicum. Pars Systematica. Vol. I. 304 pp. Leopoli.
- TORREY, R. H. 1937. *Dactylina arctica* in the United States. *Rhodora* 39: 152.

STUDIES IN THE COMPOSITION AND DISTRIBUTION OF THE OKLAHOMA FLORA—XXI¹

U. T. WATERFALL

CONTINUED investigations of our state's flora have resulted in additional data concerning its composition and distribution. In this paper the taxa not found listed in monographs, floras, checklists, and similar publications as occurring in Oklahoma are prefixed with an asterisk. There are 34 such entities recorded here. Four of them are newly described forms. About one-third of these additions were collected in southeastern Oklahoma, mostly in McCurtain County. The Ozark region in the northeast, and the two or three southwestermost counties each provided about one-fifth of the species listed. The rest came from various parts of the state. Unless otherwise indicated the cited specimens are to be found in the Herbarium of Oklahoma A. & M. College at Stillwater.

BOTRYCHIUM DISSECTUM Spreng., forma *OBLIQUUM* (Muhl.) Fern. is little known in the state. Stemen and Myers in their Flora, p. 17, state that it occurs in McCurtain County. The only material I have seen is *Coryell 715*, edge of pine-oak woods 6 miles southeast of Bethel, McCurtain County, Oct. 22, 1950.

CHEILANTHES WOOTONI Maxon has been reported from the Wichita Mts. of southwestern Oklahoma. We also have it as *F. C. Green*, collected on Hallock's Ranch, Cimarron County.

**ARISTIDA BARBATA* Fourn. is an unbranched perennial with an open panicle having glandular tissue in the axil of each panicle-branch, and with the first glume a little shorter than the second one. It is represented from Cimarron County by the following: *Waterfall 7479*, base of Black Mesa, 4 miles north of Kenton, July 9, 1947; *Waterfall 8634*, ditch 13 miles west of Boise City, Aug. 22, 1948; *Waterfall 9740*, sandstone slopes,

¹ The 20 previous papers in this series have appeared under various titles in the last 14 years. Most of them were published in *RHODORA*.